

REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 1-60 are pending in the application.

In the previous Action, the Office rejected originally submitted claims 1-51 in view of a primary reference, U.S. Patent No. 6,307,541 to Ho et al., alone and in combination with multiple secondary references. Applicant's response was apparently persuasive as the Office has withdrawn the rejection of the claims in view of these previously cited references. However, the Office has now raised new grounds for rejecting the claims, which are addressed fully below.

Applicant thanks the Examiner once again for a detailed analysis presented in the Office Action.

Claim 11

Claim 11 is noted on the summary sheet as being rejected, but is not directly addressed in the Action. It is unclear what art is being applied in the rejection of claim 11. For this Response, since the claimed feature is similar to features found in other rejected claims, Applicant has assumed that the omission of claim 11 in the Action was an unintended oversight. If the assumption is correct, Applicant requests clarification by the Office as to how the art is being applied to claim 11.

Claim Rejections under 35 U.S.C. § 103

Claims 1-7, 9-10, 15-26, 29-33, 36-42, 45-57, and 59-60 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,674,372 to

1 Ouyang (hereinafter, "Ouyang") in view of U.S. Patent No. 6,014,615 to Chen
2 (hereinafter, "Chen"). Applicant respectfully traverses the rejection.

3 As a preliminary matter, all pending claims 1-60 are rejected in view of the
4 Ouyang and Chen combination (with some claims also being rejected further in
5 view of additional references). The combination of Ouyang and Chen is improper
6 for a number of reasons. First, there is no motivation to combine these references.
7 Ouyang is directed to a device, such as a cellular phone, with a numeric keypad
8 and limited screen area. Ouyang is concerned with the challenges of entering
9 Chinese characters with a limited number of keys, such as a 12-key keypad. In
10 contrast, Chen describes a personal computer with a full-size QWERTY keyboard
11 and monitor. Chen's system does not even address how characters are input, other
12 than to say that input is accomplished using a keyboard.

13 Input of Chinese characters using a 12-key keypad (such as those found on
14 cellphones and PDAs) poses entirely different problems and issues, with unique
15 considerations, in comparison to input of Chinese characters using a full-size
16 QWERTY keyboard. A skilled artisan attempting to address the issues of inputting
17 Chinese characters using a numeric keypad would not have been compelled or
18 motivated to consider Chen's computer system with full-size keyboard. Moreover,
19 there is no motivation or suggestion in Chen whatsoever to implement his
20 technology in a mobile device with a small 12-key keypad. The Office fails to
21 describe how the references themselves suggest such a combination.

22 Further, it is unclear whether the Ouyang device could even be modified to
23 implement Chen's computer-implemented system. There is no teaching in Chen
24 of implementing the system in mobile devices. There is no indication that input
25 design issues faced by device designers were even contemplated by Chen. The

1 Action fails to describe how this combination would be made. Ouyang's cellular
2 phone would have to be severely modified, much beyond its teachings, in order to
3 implement the system of Chang.

4 For these reasons, the combination relied on throughout the Office Action
5 is improper and should not have been made. Applicant respectfully requests
6 reconsideration of the cited combination, and withdrawal of all §103 rejections
7 using this combination.

8 The flaws in the combination are even more apparent when attempting to
9 apply them to the claimed invention. Accordingly, the remainder of these remarks
10 addresses the rejections in a claim-by-claim analysis.

11 **Claim 1** defines a mobile device, comprising:

12 a keypad of number keys, the number keys having associated
13 letters;

14 a language system to receive an input string entered via the
15 keypad that is representative of one or more phonetic characters and
generate likely language characters based on the input string;

16 a display to present the likely language characters for user
17 selection; and

18 the language system being configured to facilitate input of the
19 input string and selection of a language character without switching
modes between input and selection.

20
21 As described in one exemplary implementation in the subject application,
22 Applicant's claimed mobile device has a keypad with numbers, where the number
23 keys have associated letters. Fig. 1 of the subject application is reproduced below.
24
25

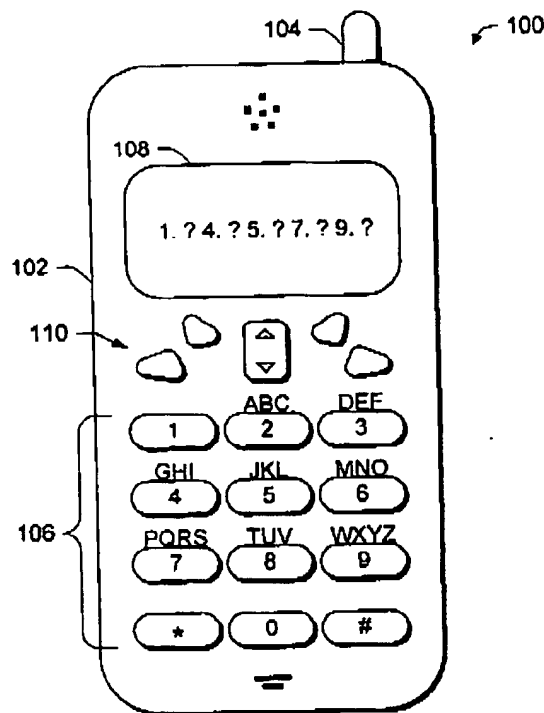


Fig. 1

The mobile device constructs a phonetic character (e.g., Pinyin) through input of a string of letters by pressing the corresponding lettered keys of the keypad. For example, to input the phonetic Pinyin text "mi" or "ni", the user would press 6 to input "m" or "n" and then 4 to yield "mi" or "ni". With each input, the mobile phone presents possible language characters (e.g., Hanzi). The available choices are indexed by specifically chosen keys that have associated letters of the alphabet that do not follow the phonetic characters already entered. Continuing the above example, after the user enters "64", keys 1, 4, 5, 7, and 9 are chosen as selection keys because the letters associated with digits 4 (GHI), 5 (JKL), and 7 (PQRS) (note that digits 1 and 9 do not have any associated letters) would not follow a Pinyin string of "mi" or "ni". The possible language characters (e.g., Chinese Hanzi characters) are thus assigned to the selection keys 1, 4, 5, 7,

1 and 9. If the user sees a word that he/she wants to input, the user can directly
2 press any one of the keys 1, 4, 5, 7, and 9 for immediate selection of the
3 corresponding language character.

4 The remaining keys 2, 3, 6, and 8 continue being input keys because they
5 correspond to phonetic characters that still might be entered. For example,
6 following entry of "mi" or "ni" by pressing keys 6 and 4, the user may be
7 intending to enter the Pinyin text "min" or "nin". Thus, pressing the key 6 again
8 will form a three digit input of 6, 4, 6 for further input of phonetic text to yield
9 "min" or "nin", rather than selection of a converted character.

10 Accordingly, depending upon the user's input, the device dynamically
11 adjusts which keys are used to index possible language characters and which keys
12 are used to receive further phonetic text, thereby allowing differentiation between
13 the user's input of an additional phonetic text and the user's confirmation of an
14 intended converted language character. In this manner, the user need not switch
15 modes between input and selection, as they are seamlessly integrated.

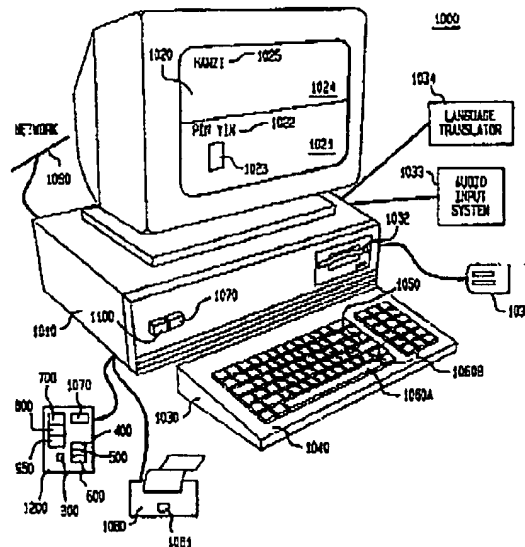
16 The combination of Ouyang and Chen fails to teach or suggest the mobile
17 device of claim 1. The primary reference, Ouyang, describes a device, such as a
18 cellphone, with a numeric keypad customized for entry of Chinese text. Instead of
19 having letters associated with the numbered keys, this customized keypad assigns
20 specific phonetic symbols and tone symbols to the numbered keys. (*Ouyang*, Fig.
21 1 and col. 6, line 36 through col. 7, line 9). The user presses a key to input the
22 corresponding phonetic symbol or tone signal. Fig. 2 of Ouyang is reproduced
23 below.

1 ㄣ ㄣ ㄣ ㄣ	2 ㄣ ㄣ ㄣ ㄣ	3 ㄣ ㄣ ㄣ ㄣ
4 ㄣ ㄣ ㄣ ㄣ	5 ㄣ ㄣ ㄣ ㄣ	6 ㄣ ㄣ ㄣ ㄣ
7 ㄣ ㄣ ㄣ ㄣ	8 ㄣ ㄣ FIRST TONE	9 ㄣ ㄣ SECOND TONE
* ㄣ ㄣ ㄣ ㄣ	0 ㄣ ㄣ THIRD TONE	# ㄣ ㄣ FOURTH TONE LIGHT TONE

Fig 2 of the Ouyang Reference

Unlike Ouyang, the secondary reference, Chen, describes a computer system for converting Pinyin to Hanzi. Chen's computer system uses a full size QWERTY keyboard. (*Chen*, Fig. 1). The user employs the full size keyboard 1030 to enter Pinyin text into the system, where it is displayed on a first section 1021 of a split screen. The system converts the Pinyin to Hanzi, and displays Hanzi characters in a second section 1024 of the split screen. (*Chen*, Fig. 1, col. 6, lines 21-33). Fig. 1 of Chen is reproduced below.

FIG. 1



The cited combination does not teach or suggest a mobile device having “a keypad of number keys, the number keys having associated letters” as required by claim 1. Ouyang describes a keypad with number keys, but the number keys do not have associated letters; rather, the number keys are assigned corresponding phonetic and tone symbols. Chen describes a full size QWERTY keyboard, and is silent as to a keypad with number keys that are used for entry of phonetic characters.

For this reason alone, claim 1 is patentable over the combination of Ouyang and Chen.

Secondly, the cited combination does not teach or suggest a mobile device with a “language system” that is “configured to facilitate input of the input string and selection of a language character without switching modes between input and selection” as required by claim 1. The Office acknowledges that Ouyang does not teach this feature. (*Office Action of 2/9/05, page 2*). The Office relies on Chen as

1 teaching this aspect, and particularly points to Fig. 4 and accompanying text
2 beginning at column 10, line 50. (*Office Action of 2/9/05, pages 2-3*). Applicant
3 disagrees.

4 According to Chen, Fig. 4 shows a "process for keyboard input that
5 produces a Pinyin word registration in the memory." (*Chen*, col. 5, lines 31-33).
6 The user enters Chinese or English text through the keyboard 1030, where Chinese
7 syllables are followed by a diacritic and English syllables are not, but are
8 delimited by spaces. (*Chen*, col. 10, lines 50-67). The entered Pinyin is displayed
9 in a first section 1021 of the monitor (see Fig. 1). When the end of a syllable is
10 reached, the system reads the diacritic. (*Chen*, col. 11, lines 12-14). The system
11 converts the Pinyin to Hanzi, and displays the Hanzi in the second section 1024 of
12 the monitor. Unlike mobile devices with limited entry keys and limited screen
13 area (as in claim 1), Chen is not concerned with switching modes between input
14 and selection because Chen's system employs a large monitor with sufficient
15 screen area to show both the input Pinyin (*Chen*, Fig. 1, Pinyin section 1021) and
16 converted Hanzi (*Chen*, Fig. 1, Hanzi section 1024). Chen's system further
17 includes a full size keyboard where the user need not worry about switching
18 between input and selection as there are many keys for both purposes. Thus, Chen
19 does not suggest a "language system" that is "configured to facilitate input of the
20 input string and selection of a language character without switching modes
21 between input and selection" as required by claim 1.

22 For this additional reason, claim 1 is patentable over Ouyang and Chen.

23 Finally, the Office argues that it would have been obvious to one of
24 ordinary skill to provide the teaching of Chen into the system of Ouyang in order
25 to speed up the language conversion process. (*Office Action of 2/9/05, pages 3*).

1 Applicant disagrees. A skilled artisan would not have combined these references,
2 as there is no motivation to combine Ouyang and Chen given that they are entirely
3 different systems. Ouyang is directed to a device with a numeric keypad and the
4 challenges of entering Chinese characters with a limited number of keys. In
5 contrast, Chen describes a personal computer with a full-size QWERTY keyboard
6 and monitor. Input of Chinese characters using a limited keypad (such as those
7 found on cellphones and PDAs) poses entirely different issues, with unique
8 considerations, in comparison to input of Chinese characters using a full-size
9 QWERTY keyboard. A skilled artisan attempting to address the issues of inputting
10 Chinese characters using a numeric keypad would not have been compelled or
11 motivated to consider Chen's computer system with full-size keyboard.

12 For the above reasons, claim 1 is allowable over the combination of
13 Ouyang and Chen. Applicant respectfully requests that the §103 rejection be
14 withdrawn.

15 Dependent claims 2-7, 9-10, and 15-16 depend from claim 1 and are
16 allowable by virtue of this dependency. Moreover, these claims recite features
17 that, when taken together with those of claim 1, define devices not taught or
18 suggested by Ouyang and Chen.

19 For example, **dependent claim 3** states "the likely language characters are
20 presented on the display in an index that associates selection keys of the keypad
21 with the language characters so that user entry of a selection key results in a
22 selection of a corresponding language character and user entry of a non-selection
23 key results in further input." To illustrate this aspect, an exemplary embodiment
24 in the specification describes that, following input of a Pinyin string of "mi" or
25 "ni", possible language characters (e.g., Chinese Hanzi characters) are assigned to

1 the selection keys 1, 4, 5, 7, and 9. If the user sees a word that he/she wants to
2 input, the user can directly press any one of the keys 1, 4, 5, 7, and 9 for
3 immediate selection of the corresponding language character. However, user entry
4 of remaining keys 2, 3, 6, and 8 results in further input because they correspond to
5 phonetic characters that still might be entered. For example, following entry of
6 "mi" or "ni" by pressing keys 6 and 4, the user may be intending to enter the
7 Pinyin text "min" or "nin". Thus, pressing the key 6 again will form a three digit
8 input of 6, 4, 6 for further input of phonetic text to yield "min" or "nin", rather
9 than selection of a converted character.

10 The cited combination fails to teach or suggest this feature. Both Ouyang
11 and Chen are silent as to this feature. The Office argues that this aspect is taught
12 by Chen at column 13-15. (*Office Action of 2/9/05, pages 3*). However, this
13 excerpt merely describes the Pinyin-to-Hanzi conversion process of Fig. 5.
14 Nowhere in this excerpt is there any discussion of displaying an "an index that
15 associates selection keys of the keypad with the language characters so that user
16 entry of a selection key results in a selection of a corresponding language
17 character and user entry of a non-selection key results in further input" as required
18 by claim 3. Indeed, Chen teaches that the Pinyin is displayed in one screen area,
19 and the converted Hanzi in another. Since the screen space is not limited and both
20 input and converted text can be displayed simultaneously, Chen does not need to
21 associate keys on the keyboard with language characters presented on the display,
22 while reserving other keys on the keyboard for further input. For this additional
23 reason, claim 3 is allowable over the cited combination.

24 **Dependent claim 4** requires "the selection keys being selected based on
25 whether the letters associated therewith follow the phonetic characters already

1 entered." Ouyang and Chen fail to teach this aspect. Chen does not even address
2 such a concept, let alone teach changing different selection keys on its keyboard
3 based on "whether the letters associated therewith follow the phonetic characters
4 already entered."

5 **Dependent claim 10** recites that "the language system includes a direct
6 key-based search engine that generates the language characters based on a key
7 sequence entered on the keypad in lieu of converting the phonetic characters to the
8 language characters." The combination does not teach or suggest this aspect, as is
9 discussed in more detail below with reference to claim 17. For this additional
10 reason, claim 10 is allowable over Ouyang and Chen.

11 **Independent claim 17** defines a mobile device comprising "a keypad of
12 number keys, the number keys having associated letters of an alphabet" and "a
13 direct key-based search engine that generates possible language characters that are
14 not part of the alphabet based on a key sequence entered on the keypad."

15 The cited combination does not teach or suggest the mobile device of claim
16 17. Neither reference teaches a "keypad of number keys" where the number keys
17 have "associated letters of an alphabet". Ouyang shows a keypad, but not one
18 with numbered keys with associated letters of an alphabet. Instead, Ouyang
19 merely shows number keys with associated phonetic symbols of the Chinese
20 language. Chen also fails to teach this aspect.

21 Additionally, neither reference teaches the claimed "direct key-based search
22 engine". The Office admits that Ouyang does not teach this aspect, but argues that
23 Chen does. (*Office Action of 2/9/05, pages 4*). More specifically, the Office cites
24 column 13, lines 54-67, column 14, lines 1-67, column 15, lines 1-14, column 17,
25

1 lines 40-67, and column 18, lines 1-3 of Chen for this teaching. Based on a review
2 of these excerpts, Applicant respectfully disagrees with the Office's position.

3 Preliminarily, Applicant notes that Chen does not teach entry of phonetic
4 text via a keypad and hence does not teach generation of "possible language
5 characters that are not part of the alphabet *based on a key sequence entered on the*
6 *keypad.*" This will become even more readily apparent with a review of the
7 excerpts cited by the Office.

8 At column 13, line 54 through column 15, line 14, Chen describes the
9 process 500 in Fig. 5 of translating Pinyin into Hanzi. The process involves a
10 morphological analysis to determine the constituent words in a word string.
11 (*Chen*, col. 13, lines 60-67 and col. 14, lines 21-22). Per Chen, morphology is the
12 study of word formation in a language. (*Chen*, col. 14, lines 12-13). The words
13 are compared to a vocabulary or dictionary. (*Chen*, col. 14, lines 22-33). If the
14 word matches a single word in the vocabulary (i.e., it is unique), the word is
15 converted to Hanzi and displayed. (*Chen*, col. 14, lines 34-38). If the word is not
16 unique (i.e., there may be more than one possible Hanzi form), the different words
17 are stored for more consideration. (*Chen*, col. 14, lines 38-42). If the word is not
18 in the vocabulary, morphological analysis is performed on the string. (*Chen*, col.
19 14, lines 43 to col. 15, line 3). Finally, if the string remains ambiguous (or non-
20 unique) after the morphological analysis, the string is analyzed to determine the
21 meaning of any ambiguous word(s) at step 540, which is process 600 of Fig. 6.
22 (*Chen*, col. 15, lines 4-14). Process 600 presents a "novel syntactical analysis".
23 (*Chen*, col. 17, lines 4-7). Part of this process involves comparison of words to a
24 function word list and an affix list. (*Chen*, col. 17, lines 40-54).

1 Accordingly, nowhere in the excerpts cited by the Office does Chen
2 describe "a direct key-based search engine that generates possible language
3 characters that are not part of the alphabet based on a key sequence entered on the
4 keypad" as required by claim 17. Instead, Chen describes process intensive
5 methods involving morphological analysis and syntactical analysis. Neither of the
6 analyses involves generating possible language characters based on a key
7 sequence entered on the keypad. Indeed, Chen does not even contemplate
8 generating possible language characters based on keystroke sequences on the
9 keyboard. Moreover, Chen would not need to contemplate a direct-key based
10 search engine because it is not directed to a device (e.g., mobile device) with
11 limited input capabilities (i.e., a 12-key keypad), limited output (i.e., a small
12 screen) and limited processing capabilities. Chen's computing system has the
13 luxury of handling process-intensive analyses of word strings entered using a full-
14 size keyboard.

15 For these reasons, the cited combination does not teach or suggest the
16 mobile device of claim 17. Applicant respectfully requests that the §103 rejection
17 of claim 17 be withdrawn.

18 **Dependent claims 18-20** depend from claim 17 and are allowable by virtue
19 of this dependency. Moreover, these claims recite features that, when taken
20 together with those of claim 17, define mobile devices not taught or suggested by
21 Ouyang and Chen.

22 **Independent claim 21** defines a mobile device, comprising:

23 a keypad of number keys, the number keys having associated
24 letters of an alphabet;
25

1 an association module that associates a key sequence with
2 language characters that are not part of the alphabet; and

3 a display to present the possible language characters as the user
4 depresses individual keys based on the key sequence.

5 Ouyang and Chen fail to teach this mobile device. For the reasons given
6 above with respect to claim 17, the cited combination fails to teach or suggest the
7 claimed "keypad of number keys" where the number keys have "associated letters
8 of an alphabet." The cited combination further fails to teach "an association
9 module that associates a key sequence with language characters that are not part of
10 the alphabet" and "a display to present the possible language characters as the user
11 depresses individual keys based on the key sequence." The Office admits that
12 Ouyang does not teach these aspects. (*Office Action of 2/9/05*, page 5). However,
13 the Office cites Chen for this teaching, specifically noting element 420 in Fig. 4
14 and an excerpt bridging columns 11 and 12. Applicant disagrees.

15 First, Applicant is unable to find an element 420 in Fig. 4. If the rejection
16 is maintained, clarification is requested. Second, the excerpt bridging columns 11
17 and 12 merely describes coding Mandarin syllables with unique two-byte codes.
18 For instance, the Mandarin Pinyin symbol Pi'n is assigned a two-byte code "814".
19 However, nowhere in this excerpt is there any teaching that this code corresponds
20 to a key sequence from the keyboard. Thus, Chen does not teach "an association
21 module that associates a key sequence with language characters that are not part of
22 the alphabet" as required by claim 21.

23 For these reasons, claim 21 is allowable over the cited combination and the
24 §103 rejection should be withdrawn.

1 **Dependent claims 22-23** depend from claim 21 and are allowable by virtue
2 of this dependency.

3 **Independent claim 24** defines a mobile device comprising:

4 a keypad of number keys, the number keys having associated
5 letters of an alphabet;

6 a language system to receive an input string of letters from the
7 alphabet entered via associated number keys of the keypad, where
8 the input string of letters is representative of one or more phonetic
9 characters, and to convert the phonetic characters to language
10 characters that are not part of the alphabet using a statistical
11 language model that utilizes at least one neighboring word in a
12 common sentence; and

13 a display to present the language characters for user selection.

14 The combination of Ouyang and Chen fails to teach the claimed mobile
15 device. The Office recognizes that Ouyang does not teach the language system.
16 (*Office Action of 2/9/05*, page 6), but again relies on Chen for this teaching.
17 Again, Applicant respectfully disagrees. First, Chen fails to teach a "language
18 system to receive an input string of letters from the alphabet entered via associated
19 number keys of the keypad, where the input string of letters is representative of
20 one or more phonetic characters" as required by claim 24. This has been
21 addressed above in detail. Secondly, Chen fails to teach "a language system . . . to
22 convert the phonetic characters to language characters that are not part of the
23 alphabet using a statistical language model that utilizes at least one neighboring
24 word in a common sentence." The Office cites the same excerpts as above with
25 respect to claim 17, which discussed morphological and syntactical analyses.
Nowhere does Chen describe in these excerpts a language system that converts
phonetic characters to language characters "using a statistical language model that

1 utilizes at least one neighboring word in a common sentence" as required by claim
2 24. If the rejection is maintained, Applicant requests that the Office's reasoning
3 be further explained.

4 For these reason alone, claim 24 is allowable over the cited combination of
5 Ouyang and Chen. Accordingly, Applicant requests that the §103 rejection be
6 withdrawn.

7 **Dependent claims 25-26** depend from claim 24 and are allowable by virtue
8 of this dependency.

9 **Independent claim 29** defines a method comprising "receiving an input
10 string entered via a keypad", "presenting likely language characters based on the
11 input string", and "facilitating continued entry of the input string and selection of a
12 suitable language character without switching modes between input and
13 selection."

14 For the reasons given above with respect to claim 1, Ouyang and Chen do
15 not teach or suggest this method. Namely, the cited combination does not suggest
16 "facilitating continued entry of the input string and selection of a suitable language
17 character without switching modes between input and selection."

18 Applicant respectfully requests allowance of claim 29.

19 **Dependent claims 30-33 and 36** depend from claim 29 and are allowable
20 by virtue of this dependency.

21 **Independent claim 37** requires:

22 receiving an input string entered via a numeric-based keypad
23 where number keys in the keypad have associated letters in an
24 alphabet, the input string being representative of one or more
25 phonetic characters;

1 converting the input string of phonetic characters to possible
2 language characters that are not part of the alphabet; and

3 presenting the language characters using an index that associates
4 selection keys of the keypad with the language characters, the
5 selection keys being chosen based on whether the letters associated
6 with the selection keys are likely to follow the phonetic characters
7 already entered.

8 For the reasons given above with respect to claims 1 and 3, the cited
9 combination fails to teach or suggest this method. Claim 37 is therefore allowable
10 over Ouyang and Chen and the §103 rejection should be withdrawn.

11 **Dependent claims 38-42** depend from claim 37 and are allowable by virtue
12 of this dependency.

13 **Independent claim 45** defines a method comprising "facilitating entry of
14 phonetic characters via discrete keys of a keypad" and "generating possible
15 language characters intended by the user based on a key sequence entered on the
16 keypad in lieu of converting the phonetic characters to the language characters."

17 For the reasons given above with respect to claim 17, the cited combination
18 does not teach or suggest this method. The Office admits that Ouyang does not
19 teach the "generating" element. Chen is silent as to this feature as well. Chen
20 uses morphological and syntactical analyses to convert Pinyin to Hanzi. Thus,
21 Chen does not teach, or effectively teaches away from, "generating possible
22 language characters intended by the user *based on a key sequence entered on the*
23 *keypad in lieu of converting the phonetic characters to the language characters.*"

24 For these reasons, claim 37 is allowable and the §103 rejection should be
25 withdrawn.

Dependent claim 46 depends from claim 45 and is allowable by virtue of
this dependency.

1 **Independent claim 47** defines a method comprising:

2 receiving key entries entered via a numeric-based keypad where
3 number keys in the keypad have associated letters;

4 associating strings of key entries with language characters that
5 are different than the letters; and

6 presenting likely language characters intended by the user as the
7 user depresses individual keys.

8 For the reasons given above with respect to claims 17 and 21, the cited
9 combination fails to teach the method of claim 47, including "associating strings
10 of key entries with language characters that are different than the letters" and
11 "presenting likely language characters intended by the user as the user depresses
12 individual keys." The §103 rejection should be withdrawn.

13 **Dependent claim 48** depends from claim 47 and is allowable by virtue of
14 this dependency.

15 **Independent claim 49** recites a method comprising:

16 receiving an input string of letters entered via a numeric-based
17 keypad where number keys in the keypad have associated letters, the
18 input string of letters being representative of one or more phonetic
19 characters;

20 converting the input string of letters that represent the phonetic
21 characters to possible language characters based upon a context of at
22 least one word in a sentence within which the input string is a part;
23 and

24 presenting the possible language characters for selection by the
25 user.

1 For the reasons given above with respect to claim 24, the cited combination
2 does not teach or suggest this method. The §103 rejection should be withdrawn.

3 **Dependent claim 50** depends from claim 49, and is allowable by virtue of
4 this dependency.

5 **Independent claim 51** is noted as being rejected as being unpatentable
6 over Ouyang and Chen. However, this rejection is believed to have been made in
7 error, as claim 51 is rejected subsequently in view of Ouyang, Chen, and
8 Matsuzuka. (*Office Action of 2/9/05*, page 8, section 4). In this section, the Office
9 states that Ouyang and Chen alone fails to teach aspects of claim 51, and hence the
10 rejection here in view of Ouyang and Chen alone should be withdrawn. Claim 51
11 is addressed in detail below.

12 **Independent claim 52** defines a mobile device, comprising:

13 a keypad of number keys, the number keys having associated
14 letters of an alphabet;

15 a language system to receive an input string of letters from the
16 alphabet entered via associated number keys of the keypad, where
17 the input string of letters is representative of one or more phonetic
characters, and to generate likely language characters based on the
input string; and

18 a display to present the likely language characters for user
19 selection.

20
21 For the reasons given above with respect to claims 1, the Ouyang/Chen
22 combination fails to teach or suggest the claimed mobile device.

23 **Dependent claims 53-57 and 59-60** depend from claim 52 and are
24 allowable by virtue of this dependency. Claims 53, 54, 55, 57, and 59 also benefit
25

1 from arguments made above with respect to claim 3, 4, 21, 24, and 17,
2 respectively.

3
4 Ouyang + Chen + Kantrowitz

5 Claims 8 and 58 stand rejected under 35 U.S.C. § 103 as being unpatentable
6 over Ouyang in view of Chen and further in view of U.S. Patent No. 6,292,772 to
7 Kantrowitz (hereinafter, "Kantrowitz"). Applicant respectfully traverses the
8 rejection.

9 **Dependent claim 8** depends from claim 1 and further requires that the
10 language system include "a character-based bigram language model and a word-
11 based N-gram language model, where $N > 2$." The Office recognizes that Ouyang
12 and Chen fail to teach these aspects, and thus relies on Kantrowitz. However,
13 Kantrowitz provides no teaching of a device having the language system of claim
14 1, where the language system facilitates "input of the input string and selection of
15 a language character without switching modes between input and selection."
16 Additionally, the combination is improper as there is no suggestion in Chen or
17 Kantrowitz to modify the process intensive morphology and syntactical analyses
18 of Chen to implement the claimed bigram language model and word-based N-
19 gram language model. Accordingly, the combination of Ouyang, Chen, and
20 Kantrowitz fails to teach the device of claim 8. For these reasons, claim 8 should
21 be allowed.

22 **Dependent claim 58** depends from claim 52 and further requires that the
23 language system include "a character-based bigram language model and a word-
24 based N-gram language model, where $N > 2$." Kantrowitz fails to provide the
25

1 teaching missing from Ouyang and Chen with respect to claim 52, and hence
2 claim 58 should be allowed.

3
4 Ouyang + Chen + Kiraz

5 Claims 12-13, 34-35, and 43-44 stand rejected under 35 U.S.C. § 103 as
6 being unpatentable over Ouyang in view of Chen, and further in view of U.S.
7 Patent No. 6,307,541 to Kiraz (hereinafter, "Kiraz"). Applicant respectfully
8 traverses the rejection.

9 **Dependent claims 12-13, 34-35, and 43-44** depend respectively from
10 claims 1, 29, and 37. The Office recognizes that Ouyang and Chen do not teach
11 the language system defined in these dependent claims, but cites Kiraz for their
12 teaching. However, Kiraz fails to provide any of the teaching absent from Ouyang
13 and Chen as to the devices and methods of base claims 1, 29, and 37.
14 Accordingly, the combination fails to teach or suggest the claims 12-13, 34-35,
15 and 43-44.

16
17 Ouyang + Chen + Matsuzuka

18 Claims 14, 27, and 51 are rejected under 35 U.S.C. § 103 as being
19 unpatentable over Ouyang in view of Chen, and further in view of U.S. Patent No.
20 5,838,972 to Matsuzuka et al. (hereinafter, "Matsuzuka"). Applicant respectfully
21 traverses the rejection.

22 **Dependent claim 14** depends from claim 1, and hence includes the features
23 therein. Ouyang and Chen fail to teach or suggest the aspects of claim 1,
24 including a "language system being configured to facilitate input of the input
25 string and selection of a language character without switching modes between

1 input and selection.” Matsuzuka fails to add any relevant teaching with respect to
2 this feature. Accordingly, the combination of Ouyang, Chen, and Matsuzuka fails
3 to teach or suggest the device of claim 14.

4 **Independent claim 27** defines a system comprising:

5 a resident language model residing on a mobile device to convert
6 phonetic characters input into the mobile device into language
characters using a first statistical language model; and

7 a nonresident language model residing on a server remote from
8 the mobile device, the nonresident language model being configured
9 to convert the phonetic characters into the language characters using
a second statistical language model.

10
11 The cited combination of Ouyang, Chen, and Matsuzuka fails to teach or
12 suggest the claimed system. First, none of Ouyang, Chen, or Matsuzuka teaches a
13 “resident language model residing on a mobile device to convert phonetic
14 characters input into the mobile device into language characters using a first
15 statistical language model.” As noted above, Ouyang does not employ a statistical
16 language model. Matsuzuka fails to provide any teaching of a “mobile device to
17 convert phonetic characters input into the mobile device into language characters
18 using a first statistical language model.” For this reason alone, claim 27 is
19 allowable.

20 Secondly, none of the references, alone or in combination, teaches a system
21 with *both* a “resident language model residing on a mobile device” and “a
22 nonresident language model residing on a server remote from the mobile device.”
23 Ouyang describes a portable device, Ouyang describes a PC-based computing
24 system, and Matsuzuka refers to a remote server model where a language model is
25 executed on a remote server, rather than the client. However, none of these

1 references teaches that a system where one language model resides on the mobile
2 device and the second language model resides on the server. Indeed, without
3 Applicant's claim as a roadmap, there are no express teachings in Ouyang, Chen,
4 or Matsuzuka that would even suggest such a combination. For this additional
5 reason, claim 27 is allowable.

6 **Independent claim 51** defines a method comprising:

7 receiving an input string entered via a keypad on a mobile
8 device;

9 sending the input string to a remote server;

10 generating likely language characters based on the input string at
11 the remote server; and

12 returning the likely language characters to the mobile device for
13 display.

14 For similar reasons noted above with respect to claim 27, the
15 Ouyang/Chen/Matsuzuka combination fails to teach or suggest this method.

16
17 Ouyang + Chen + Kantrowitz + Kantrowitz

18 Claim 28 is rejected under 35 U.S.C. § 103 as being unpatentable over
19 Ouyang in view of Chen and Matsuzuka and further in view of Kantrowitz.
20 Applicant respectfully traverses the rejection.

21 **Dependent claim 28** depends from claim 27. For the reasons given above,
22 Ouyang, Chen, and Matsuzuka fail to teach the system of claim 27. Kantrowitz
23 does not offer any of the missing teaching. Accordingly, the combination of
24 Ouyang, Chen, Matsuzuka, and Kantrowitz does not suggest the system of
25 dependent claim 28.

1
2 Conclusion

3 Claims 1-60 are in condition for allowance. Applicant respectfully requests
4 reconsideration and prompt allowance of the subject application. If any issue
5 remains unresolved that would prevent allowance of this case, the Examiner is
6 requested to contact the undersigned attorney to resolve the issue.

7
8 Respectfully Submitted,

9 Date: June 7, 2005

10 By: 

11 Lewis C. Lee
12 Lee & Hayes, PLLC
13 Reg. No. 34,656
14 (509) 324-9256 ext. 211
15
16
17
18
19
20
21
22
23
24
25